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Glossary from Landslide Ecology

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Glossary

Abiotic Pertaining to non-living factors such as wind, temperature, erosion.

Actinorhizal Plants with a symbiosis with the nitrogen fixing actinobacteria *Frankia*.

Allelopathy Form of competitive inhibition based on the release of chemicals.

Anthropogenic Created or influenced by humans.

Avalanche Sudden flow of snow down a slope. A "dirty" avalanche includes soil and rock.

Biodiversity Number and proportional distribution of species in a specified location.

Bioerosion The erosion of hard ocean substrate including coral by living organisms such as worms, mollusks, and fish.

Biomass Mass of all organisms (living or dead) at a site.

Biotic Pertaining to living factors.

Bryophyte A non-vascular land plant that is a moss, hornwort, or liverwort.

Check dam A small dam built to reduce erosion and allow sediments to settle in drainage areas.

Chronosequence Space-for-time substitution that allows study of long-term succession.

Chute Often elongated region in the middle of the landslide through which material is transported from the slip face to the deposition zone. Also called zone of depletion or flow track.

Clay Very fine-grained sediment (< 0.002 mm diameter).

Collembola Springtails, an abundant and primitive group of wingless, insect-like arthropods.

Colluvium Gravity-transported sediments deposited at the base of a slope.

Competition Negative effect of two species on each other.

Creep Very slow form of mass wasting.

Crown Upper boundary of the slip face.

Debris Unconsolidated, mostly coarse (> 2 mm diameter), weathered rock and soil; regolith. Also can include branches, logs, and other loose vegetation remnants of any size.

Deposition zone Terminus of transported material. Also called the foot.

Disturbance Relatively abrupt event that causes a loss of biomass, ecosystem structure, or ecosystem function.

Driving forces Those forces that tend to make earth material slide.

Epiphyte Plant growing on another plant or surface without direct contact with the soil.

Evapotranspiration Transfer of water to the atmosphere by evaporation from humid surfaces plus transpiration by plants.

Facilitation Positive effect of one species on another, often in a successional context.

Fall Downward and outward movement of rocks or soil with exposed faces.

Fault A geological fracture with movement along either side.

Fjord Glacially eroded valley inundated by the ocean.

Floodplain The flat topography adjacent to a river produced by overbank flow and lateral migration of meanders.

Flow Movement of rock or soil influenced by gravity (see mass movement).

Fluvial Pertaining to rivers and streams.

Food web Set of connections among species based on which species are eaten by which other species.

Foot See deposition zone.

Forb Any broad-leaved, herbaceous seed plant that is not a grass or grass-like.

Frugivorous Fruit-eating.

Gabion Rock-filled wire cage used to stabilize slopes.

Gap specialist Species adapted to recently disturbed, high-light envir onments.

Gravel Unconsolidated, generally rounded fragments of rocks and minerals (> 2 mm diameter)

Hummocky terrain Land characterized by many small hills (< 15 m tall).

Hydrophytic A plant that grows partly or wholly in water.

Indeterminate growth Growth that continues throughout the lifespan of the organism.

Inhibition Competition, often in a successional context.

Jevon's paradox Increased efficiency of use of a resource increases rather than decreases the rate of consumption of that resource.

Landslide In the strictest sense, a sliding movement of a mass of rock, debris (loose rock or regolith), or earth (finer sediments with or without organic material) down a slope. In the broader sense used in this book, all types of slope failures or mass wasting that include slides, falls, flows, or combinations of these three types of movements and the habitats that are created.

Legacy Biological legacy is any life that survives a disturbance, e.g., buried seeds.

Liquefaction Fluid-like properties of clay-rich soils upon losing their shear strength.

Mass movement Movement of rock or soil influenced by gravity (see **Flow**); also called mass wasting.

Mass transport Movement of rock or soil by a transporting medium such as water, air, or ice.

Microsite Small-scale habitat; the immediate environmental conditions affecting an organism.

Macrosite Large-scale habitat; the broader environmental conditions affecting an organism.

Mycorrhizae Fungi that typically live in or on the surface of roots and aid plants in the absorption of water and nutrients in exchange for carbohydrates.

Nitrogen fixation Process of converting atmospheric nitrogen into forms usable by organisms.

Overland flow Flow of water on the surface of the earth not confined to channels. Results when precipitation rates exceed infiltration rates.

Permafrost Permanently frozen ground.

Pore pressure Pressure of ground water held in the pore spaces of soil or rock. Also called pore water pressure or pore fluid pressure.

Propagule Any reproductive unit adapted to dispersal, e.g., seed, spore, or vegetative part of a plant.

Rachis Central midrib of a fern leaf.

Regolith Loose rock and soil above bedrock.

Restoration Actions that reverse degradation and lead to partial (*sensu lato*) or full (*sensu stricto*) recovery of pre-disturbance structure and function. See Table 6.3 for associated terms.

Retrogressive landslide Landslide that continues to erode a slope, gradually moving further into and up the slope with each re-sliding.

Retrogressive succession Loss of complexity or function in latter stages of succession, often due to severe leaching of nutrients from surface soils.

Rhizome Horizontal or ascending stem growing at or below the soil surface.

Sand Grains of sediment 0.06–2 mm in diameter.

Saprolite Highly chemically weathered, "rotten" rock.

Scar New habitat created by a landslide as delineated by the surface of rupture (see Fig. 1.1).

Scarification Mechanical or chemical abrasion of a seed coat, which may promote germination.

Scarp See slip face.

Scrambling fern A fern with indeterminate growth that spreads across the soil or other vegetation.

Sediment Fine-grained material (mostly < 2 mm diameter) at the surface of the regolith.

Seed rain Aerially dispersed seeds.

Sere Sequence of successional stages.

Senescence Aging of organisms with reduction in function.

Shear strength Magnitude of stress that a soil can sustain without sliding.

Silt Fine sediments 0.002–0.06 mm in diameter.

Slide Landslide that moves by slumping or along a plane (translational slide).

Slip face Upper zone of landslide detachment, also called scarp or failure scar.

Slip plane Weakness plane in below-ground substrate where landslides occur when driving forces exceed resisting forces.

Slump Landslide that undergoes a rotation as it descends.

Soil Earth material so modified by biological, chemical, and physical processes that the material will support rooted plants.

Solifluction Soil movement down slope due to freeze – thaw cycles.

Spread Lateral expansion of a cohesive soil or rock mass.

Springtails *See* **Collembola**.

Stochastic Unpredictable.

Stolon Elongated, horizontal stem that forms new shoots at its end.

Submarine landslide A landslide that occurs in the ocean.

Succession Change in community structure and composition over time following a severe disturbance that removes most soil and organic matter (primary) or a less severe disturbance that leaves some soil and organic matter intact (secondary).

Swale pond Small body of water formed by in-filling of a depression or swale.

Talus Collection of rocks fallen from a slope.

Tectonic Referring to rock deformation.

Tension crack Crack formed by gravitational movement of a surface plane.

Terraform To reshape the geometry of a slope.

Toe Lower end of the deposition zone.

Trajectory Sequence of communities during succession.

Translational *See* **Slide**.

Tsunami Tidal wave.

Turbidity current Dense current of suspended sediments. Also called turbulent flow.

Watershed Land area that contributes water to a particular river system.

Weathering Breakdown of rocks due to biological, chemical, and physical processes.